Summary of Request

The invention concerns, for example, shutting down a motor which drives an electric window in a vehicle, when a speed change indicates that a person's hand may be caught in the window.

Every claim, in effect, states that speed must remain within a certain range, and that, if speed falls below the range, the motor is shut down or reversed. Sketch 1, on page 4 below, illustrates the range.

The references do not show that. They state that, if speed exceeds a limit, then the motor is shut down. That is different.

Further, the claims state that the range is determined after start-up of the motor, based on motor speed. The Ito reference may show a range. But that range is fixed, and is determined at the time of manufacture of his system.

Applicant has added new claims 29 – 46 to further focus on features of Applicant's invention.

End Summary

RESPONSE TO ANTICIPATION REJECTIONS OF CLAIMS
1, 2, 6 - 18, 21, AND 22

The claims listed in the heading above were rejected on grounds of anticipation, based on either Ito or Terashima.

Claim 1

Claim 1 recites:

1. For an electric motor used in a vehicle, which motor reaches different free-running speeds in different operating environments, a method comprising:

a) after start-up of the motor, establishing a number S1 representing a normal speed;

b) measuring operating speed S2 of the motor; and

c) if (S1 minus S2) is a positive number exceeding a predetermined limit, then either shutting down or reversing the motor.

Applicant points to the **highlighted** sections. Actual motor speed, S2, is, in effect, **subtracted** from the "number S1." If the result (1) is positive and (2) exceeds the "predetermined limit," then the motor is shut down, or reversed.
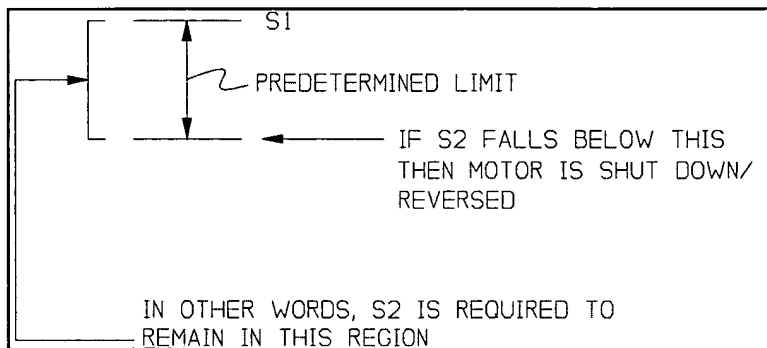
Terashima Reference

Applicant points out that Terashima does the **opposite** of this. If motor speed

exceeds his limit, then he shuts down the motor. (Column 2, lines 26 - 43.) If S1 of the

claim is treated as Terashima's limit, then his motor is shut down when (S1 minus S2)

goes **negative**.

That is **opposite** to claim 1.

Further, Applicant can find no "predetermined limit" as claimed in Terashima, and

the Office Action has not asserted that such a "limit" is present. Applicant thus requests,

37 CFR §§ 1.104(c)(2) and 35 U.S.C. § 132, that the PTO specifically identify the

"predetermined limit" in Terashima.

From another perspective, one result of the computation of claim 1 is that actual

speed is required to remain within a **window below** the number S1. The window is

determined by the "predetermined limit." Sketch 1, below, illustrates the situation.

```
┌─────────────────────────────────────────────────┐
│  ┌   ──────┬──── S1                              │
│  │         │                                     │
│  │         │ ┌ ╲                                 │
│  │ ────────┤ │  ╲─ PREDETERMINED LIMIT          │
│  │         │                                     │
│  └   ──────┴──── ◄─────── IF S2 FALLS BELOW THIS │
│                          THEN MOTOR IS SHUT DOWN/ │
│                          REVERSED                 │
│                                                   │
│                                                   │
│       IN OTHER WORDS, S2 IS REQUIRED TO           │
│  └────── REMAIN IN THIS REGION                    │
└─────────────────────────────────────────────────┘
```
Sketch 1

That operation is not found in Terashima. Terashima shuts down the motor when motor speed exceeds a threshold TH'. He does not require motor speed to remain within a window.

Therefore,

-- Terashima shuts down motor speed when the difference between two parameters is **negative**, while claim 1 recites a **positive** difference; and

-- Terashima does not require motor speed to remain within a window, as does claim 1.

Ito Reference

Ito may discuss shutting down the motor when speed falls below a certain "reference value." (Column 9, line 57 et seq.) However, that "reference value" is not computed "after start-up of the motor" as claim 1 recites. Ito's "reference value" is fixed at the time of manufacture of his system.

Further, the cause-and-effect relationship of claim 1 is not found in Ito. Ito only shuts down the motor when a possibility of pinching exists. That is, if the window is fully open, no pinching can occur. Thus, Ito does not shut down the motor if speed falls below the "reference value."

Ito only shuts down the motor when the window is in a "turning arc A," that is, nearly closed. (Column 10, top; column 1, lines 34 - 44.)

Thus, Ito requires an **additional condition** to exist for motor shut-down to occur. That does not show claim 1.

Restated, claim 1 states that **IF** A and B occur, **THEN** the motor is shut down. Ito states that **IF** A, B, and C occur, **THEN** the motor is shut down. Ito shows a different cause-and-effect relationship than does claim 1.

The fact that, when Ito's window is nearly closed, an operation similar to that claimed may be present does not refute this conclusion. Being nearly closed is the condition C just discussed.

Therefore,

-- Ito does not compute the number S1 "after start-up of the motor" as

claimed, and

-- Ito shows a different cause-and-effect relationship than claimed.

Claim 2

Claim 2 recites:

-17-

2. Method according to claim 1, and further comprising:

d) if (S1 minus S2) is a negative number, then continuing operation of the

motor.

As explained above, claim 2 is **opposite** to Terashima. Number S1 must be

treated as the speed limit of Terashima. When Terashima's speed S2 exceeds the limit,

then (S1 minus S2) is **negative**, and the motor is shut down.

That is opposite to claim 2.

Claim 6

Claim 6 recites:

6. A method, comprising:

a) maintaining an electric motor in a vehicle, said motor having a steady-

state operating speed which changes when temperature

and/or system voltage change;

b) starting the motor;

c) ascertaining steady-state speed of the motor immediately after starting,

and setting a baseline speed;

d) measuring speed of the motor while running; and

e) if the sum (baseline speed - measured speed) is a positive number

exceeding a predetermined number N, then either shutting off

or reversing the motor.

Point 1

Sketch 1, above, illustrates one embodiment of claim 6(e). As explained above, Terashima does not show that.

Also as explained above, Ito is opposite to claim 6(e). Ito shuts down the motor when (measured speed - limit) is positive. Claim 6 shuts down the motor when (measured speed - limit) is negative (that is, (limit - measured speed) is positive), and exceeds a certain avlue.

Further, Ito requires another condition: the window must be nearly closed.

Point 2

Claim 6(a) recites a motor having specified characteristics. Applicant cannot locate those in the references, and requests that they be identified.

In this connection, Applicant points out that, for example, windshield wipers, which are driven by electric motors, do not appear to change in speed at different temperatures. Also, if a motor of sufficient power is used to power a window, changes in temperature

would not seem to affect motor speed. Thus, the specified characteristics would appear not to be inherent in the references.

Point 3

Claim 6(c) recites "ascertaining steady-state speed of the motor **immediately after starting**." That clearly implies computing an average speed. Restated, an instantaneous speed is not a "steady state speed."

Applicant cannot locate that "ascertaining" step in the references, and requests that it be identified.

Claim 7

Claim 7 states that the number N is changed upon predetermined events. Number N corresponds to the PREDETERMINED LIMIT of Sketch 1, above, and determines the size of the window, or range, in Sketch 1.

Applicant cannot locate a corresponding window, or range, in the references, and requests that it be identified, together with the change in the size of the window/range.

Claim 8

Claim 8 recites:

8. Method according to claim 6, and further comprising:

f) continuing operation of the motor if measured speed exceeds baseline

speed.

Claim 8 is opposite to both references. In both references, if measured speed

exceeds a limit, the motor is shut down, if certain conditions are met. That is opposite to

claim 8, which states that operation is **continued** if "measured speed exceeds baseline

speed."

Claim 9

Claim 9 recites:

9. Method according to claim 6, wherein baseline speed equals

steady-state speed of the motor, immediately after initial

acceleration.

Applicant cannot locate claim 9 in the references, and requests that it be identified.

Applicant points out that the limit in Ito is fixed upon manufacture. Thus, it cannot

correspond to the claimed "baseline speed," which equals "steady-state speed."

Applicant points out that Terashima continually adjusts his threshold. (Column 2, lines 26 - 44.) Thus, it cannot equal the claimed "steady-state speed."

Claim 10

Claim 10 recites:

10. Method according to claim 6, wherein, in paragraph (e), if the sum (baseline speed - measured speed) is found to be a positive number exceeding a predetermined number N, then

f) refraining from shutting off and reversing the motor at that time;

g) repeatedly finding said sum for each of several baseline speeds measured at successive times thereafter, and

h) if a specified number of the sums are all positive and exceeding N, then either shutting off or reversing the motor.

Claim 10 states, for example, that if speed falls outside the window of Sketch 1, above, the motor is not shut down at that time. Instead, under paragraphs (g) and (h),

motor speed is repeatedly examined and if a "specified number" of examinations indicate

that speed is outside the window, the motor is **then** shut down.

Thus, from one point of view, the initial excursion outside the window is treated as

a warning, but as in claim 10(f), the motor is not shut down. Instead, repeated

examinations are undertaken to determine whether conditions exist warranting a shut-

down.

Applicant cannot locate (1) the events of the preamble of claim 10, and claim 10(f),

nor (2) the repeated "findings" of claim 10(g) and (h) in the references, and requests that

they be identified.

Applicant points out that the Office Action has not identified items (1) and (2) of the

previous paragraph. MPEP § 2131 states:

A claim is anticipated only if each and every element as set forth in the

claim is found, either expressly or inherently described, in a

single prior art reference.

Claim 11

Claim 11 recites:

11. A method, comprising:

a) maintaining an electric motor in a vehicle, said motor having a steady-

   state operating speed which changes when temperature

   and/or system voltage change;

b) starting the motor;

c) ascertaining steady-state speed of the motor immediately after starting,

   and setting a baseline speed;

d) measuring speed of the motor while running;

e) if the sum (baseline speed - measured speed) is a negative number,

   then continuing operation of the motor;

f) if the sum (baseline speed - measured speed) is a positive number

   exceeding a predetermined number N, thereby indicating that

   a deceleration of N below baseline has occurred, then either

   shutting off or reversing the motor;

g) ascertaining whether predetermined events have occurred, and if so,

   changing the predetermined number N; and

i) repeating processes of paragraphs (a) - (f) at least once.

The discussion above applies to claim 11.

In addition, Applicant points out that, as explained above, paragraphs (e) and (f)
are opposite to the references.

Applicant cannot locate in the references the repetition recited in paragraph (i), and requests that it be identified.

Applicant cannot locate the change of the number N, and requests that it be identified.

Claims 12 - 18, 21, and 22

The discussion above applies to claims 12 - 18, 21, and 22. In general, these claims effectively contain a recitation that, if motor speed falls outside the window of Sketch 1, above, then the motor is shut down. As explained above, the references do not show that.

RESPONSE TO OBVIOUSNESS REJECTIONS OF CLAIMS

3 - 5, 19, AND 20

Claims 3 - 5, 19, and 20 were rejected as obvious, based on (Ito or Terashima) and (Jackson I, Jackson II, or Harada).

No Teaching

No teaching has been given in favor of combining the references.

The rationale given is that "the usage of temperature control circuit for vehicle window current load determination is notorious[ly] old in the art." (Office Action, page 3,

second paragraph.) However, that rationale merely asserts that a certain element, or

elements, lies within the prior art.

The mere fact that element(s) are within the prior art is not a substitute for the

teaching required for combining references.

Rejection is of a Type Specifically Prohibited

MPEP § 2143.01 states:

FACT THAT REFERENCES CAN BE COMBINED OR MODIFIED IS NOT

SUFFICIENT   TO   ESTABLISH   PRIMA   FACIE

OBVIOUSNESS

The mere fact that references can be combined or modified does not render

the resultant combination obvious unless the prior art also

suggests the desirability of the combination.

. . .

FACT THAT THE CLAIMED INVENTION IS WITHIN THE CAPABILITIES

OF ONE OF ORDINARY SKILL IN THE ART IS NOT

SUFFICIENT BY ITSELF TO ESTABLISH PRIMA FACIE

OBVIOUSNESS

A statement that modifications of the prior art to meet the claimed invention

would have been "well within the ordinary skill of the art at the

time the claimed invention was made" because the

references relied upon teach that all aspects of the claimed

invention were individually known in the art is not sufficient to

establish a prima facie case of obviousness without some

objective reason to combine the teachings of the references.

Applicant submits that the PTO's reasoning is no different from those given

immediately above, and those are prohibited.

Even if References are Combined, Claims are not Attained

Part I

Claim 3 recites, speaking generally, changing the "predetermined limit," based on,

for example, temperature. The PTO has not shown that in any references.

Restated, the Office Action has only asserted that certain temperature-measuring

circuits, and determining of window current, exists in the prior art. Even if that be true,

claim 3 does not recite that.

Thus, even if the references are combined, claim 3 is not attained.

Even if References are Combined, Claims are not Attained

Part II

Claim 3 states that, if the "environmental parameter" reaches a "specified limit," then the "predetermined limit" is changed. Thus, for example, if ambient temperature exceeds a "specified limit," then the range in Sketch 1, above, is effectively changed.

The two-fold operation of

1) requiring window speed to remain within a range and

2) changing the range if temperature (or other environmental parameter)

changes

has not been shown in the references, even if combined.

MPEP § 2143.03 states:

To establish prima facie obviousness . . . **all the claim limitations** must be taught or suggested by the prior art.

No Expectation of Success Shown

No expectation of success has been shown, indicating that the combination of references actually works.

MPEP § 706.02(j) states:

Contents of a 35 U.S.C. 103 Rejection

. . .

To establish a prima facie case of obviousness, three basic criteria must be met.

. . .

Second, there must be a reasonable expectation of success.

. . .

The . . . reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure.

The PTO purports to find, in the Jackson and Harada references,

1) window control systems having temperature measuring circuits and

2) apparatus for determining load current in windows.

But the PTO has not explained how those apparatus can be actually incorporated into the Ito and Terashima references.

Nor has the PTO shown how that incorporation leads to the claims in question.

No expectation of success has been shown, as required by this MPEP section.

Further, no expectation of success has been shown **in the prior art**, as required.

The preceding comments apply to the other claims rejected based on obviousness.

Applicant has added new claims 29 - 46 to focus on other embodiments of Applicant's invention. These claims are also not taught by the references and should be allowed.

Applicant is filing concurrently under separate cover a request for a two-month extension of time.

The Commissioner is hereby authorized to charge any additional fees under 37 C.F.R. 1.16 and 1.17 which may be required by this paper, or to credit any overpayment, to Deposit Account No. 50-1287. Applicants hereby provide a general request for any extension of time, which may be required at any time during the prosecution of the application. The Commissioner is also authorized to charge any fees, which have not been previously paid for by, check and which are required during the prosecution of this application to Deposit Account No. 50-1287. (Should Deposit Account No. 50-1287 be deficient, please charge any further deficiencies to Deposit Account No. 10-0220).

Applicant invite the Examiner to contact the undersigned via telephone with any questions or comments regarding this case.

APPLICANT RESPECTFULLY REQUEST AN INTERVIEW WITH THE

EXAMINER IF THE EXAMINER DOES NOT BELIEVE THIS AMENDMENT PLACES

THE APPLICATION IN CONDITION FOR ALLOWANCE.

Reconsideration and favorable action are respectfully requested.

CONCLUSION

Applicant requests that the rejections to the claims be reconsidered and withdrawn.

Applicant expresses thanks to the Examiner for the careful consideration given to this

case.

Respectfully submitted,

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